Students: Income, Housing and Eviction.

Income Source

Housing Type

Race, Housing & Eviction

Renters who Moved for Financial Reasons or Eviction Vs. Race

Probability and Independence

Housing Ownership

Center and Spread of Rent Increase Amount in The Last Two years

Rent increase amounts in the last two years

5 number summary

Rental Income
Summary of the Sample

Was this a representative sample?
Students concluded that the sample was representative of the PCC student population in terms of gender, and fairly representative in terms of race and ethnicity. Each ethnicity in the sample was proportional to the PCC population except that white students were slightly underrepresented and black students were slightly overrepresented. There were responses from every campus, but Sylvania was overrepresented compared to the other campuses.

For the full analysis of each variable, see the slides that follow.
Summary of the Results

**Student Income:** 57% of students surveyed have an income of less than $10,000 per year.

**Percentage of income spent on rent:** For students who rent, the most common category was 41-60% of income spent on rent (30% of students surveyed).

**Number of student moves:** The median number of moves in the last 5 years was 2. The most common response was 1 move and the middle 50% of the students moved 1-3 times. There was one outlier, who was a student who moved 80 times due to being in temporary housing.

**Reasons for moving:** There were 111 responses because participants could select more than one option. Of those, 46 indicated that they had moved by choice and 25 for financial reasons. Nine students had been evicted. 52% of renters indicated that they had moved for financial reasons or eviction.

**Living Arrangements:** The most common response, with 39% of those surveyed, was living at home with parents. This could be due to the high cost of housing.
In the survey, race and hispanic/latinx ethnicity were separated into two different questions.

**Home ownership vs. race and ethnicity:** Overall the percentage of homeownership was 38%. Black students in the sample were the least likely to own their home or live with parents who own, at 10%. The percentage was about 25% for students who identified as multiracial, 38% for white students, 47% for Hispanic/Latinx, and 67% for Asian students. If race was not a factor in homeownership then we would expect the percentages to be the same for each group. The data does seem to confirm that race has an impact on homeownership.

**Home ownership vs. sexual orientation:** Overall, 39% of the students surveyed owned their homes or lived with parents who own. The percentage of LGBQ identifying students was about the same at 40% and the percentage for straight identifying students was lower at 35%.

For the full analysis of each variable, see the slides that follow.
In the survey, race and hispanic/latinx ethnicity were separated into two different questions.

**Reasons for moving vs. race and ethnicity:** We separated out the students who were renting to see how many had moved for financial reasons or eviction. For all of the renters, 52% indicated that they had moved for financial reasons or eviction.

Native American and Pacific Islander students had the highest percentage at 100%, students of two or more races followed at 58%, white students with 55%, black with 44%, Hispanic/Latinx with 28% and Asian at 0% of the students sampled.

For the full analysis of each variable, see the slides that follow.
Summary of the Results (Continued)

**Reasons for moving vs. orientation:** For all of the renters, 52% indicated that they had moved for financial reasons or eviction. The percentage was 92% for students who identified as LGBQ and 43% for students who identified as straight. Sexual orientation does appear to affect housing insecurity. In the future we would like to collect data on trans students as well.

For the full analysis of each variable, see the slides that follow.
Graphs and Details of the Analysis
The Context

In January of this year, 2017, the Multnomah County Library named the book *Evicted: Poverty and Profit in the American City* by Matthew Desmond for their program “Everybody Reads”. The book is a work of nonfiction in which Desmond follows and chronicles the lives of 8 families, with various ethnicities and make ups, as they struggle to sustain roofs over their head in Milwaukee, Wisconsin from May 2008 to December 2009. As official partners to the “Everybody Reads” program, PCC joined the reading of and conversation about *Evicted* during the winter term. In response to the book a survey was designed by PCC Sociology and Computer Information System students for our PCC community. The intention was to get as many people as possible to anonymously answer a variety of questions about their lives, living situations, and finances.

While we had a good number of answers to analyse, the data from the survey represents only a sample of our PCC population, because not every single member, staff and student, of our community took the survey. The data collected constitutes an observational study, therefore no causation can be concluded from the results. The survey was conducted anonymously and voluntarily, however may have resulted in some biases. The students from the classes that created the survey were encouraged to take the survey, there was a link on PCC Library’s page, and students tried to recruit volunteers at a few of the campuses to take the survey. Even though there were various ways to take and become aware of the survey the creators were not able to reach or solicit the volunteering of every member of our PCC population, and it was not a random sample. The voluntary aspect implies bias due to the fact that many people may not choose to take the survey for various reasons.

In the end, 98 volunteers took the survey. The following reports are the statistical analysis of these answers by PCC Math 243 students.
The Context (Continued)

Who was surveyed?
98 PCC Faculty/Students volunteers.

Where was the survey taken?
The survey was administered online through Portland Community College, in Portland, Oregon.

When was the survey conducted?
Winter term 2017

Why is the data important to PCC?
To understand the lives of students and their demographics. This may also help the community college think of better resources students may benefit from.

How was the data obtained?
All acquired data was obtained from a voluntary survey that was created by PCC Sociology and Computer Information Systems students.
What variables were surveyed?

<table>
<thead>
<tr>
<th>Categorical Variables</th>
<th>Quantitative Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check all that apply:</td>
<td>Single Response:</td>
</tr>
<tr>
<td>Status</td>
<td>Zip Code</td>
</tr>
<tr>
<td>Academic Goals</td>
<td>Yearly Income</td>
</tr>
<tr>
<td>Campus</td>
<td>Gender</td>
</tr>
<tr>
<td>Income Sources</td>
<td>Race</td>
</tr>
<tr>
<td>Living Arrangements</td>
<td>Ethnicity</td>
</tr>
<tr>
<td>Reasons for moving</td>
<td>Orientation</td>
</tr>
<tr>
<td>Rent Payment</td>
<td>Relationship status</td>
</tr>
<tr>
<td>Household expenses</td>
<td>Housing type</td>
</tr>
<tr>
<td>Assistance</td>
<td>History Details</td>
</tr>
<tr>
<td>History</td>
<td>Criminal Record</td>
</tr>
<tr>
<td></td>
<td>Housing Ownership</td>
</tr>
<tr>
<td>Renters who moved for</td>
<td></td>
</tr>
<tr>
<td>financial reasons or evictions (yes/no)</td>
<td></td>
</tr>
</tbody>
</table>
In order to calculate the accuracy of the sample data we compared the category of “Status” from the survey to data compiled from the PCC Student Fact Sheet. However, there is an issue of categorization. There are three categories of attendance within the PCC community according to the Fact Sheet: Full Time (12+ credits), Half Time (6-11.9 credits) and Part Time (1-5.9 credits). The survey only asked the volunteers to classify themselves as either Full Time or Part Time, with no description of credit hours. For the sake of comparison, we will combine the Part Time and Half Time student count to represent just Part Time students. We will also group all individuals who classified as either Full or Part Time within the survey, regardless of their other selected options.

The combined Part Time and Half Time student count within the Fact Sheet represents 59% of the population, while Full Time students only represent 41%. Within the sample from the survey, Full Time students represent 61.2% and Part Time students represent 35.7%. While the totals do not add up exactly, they are close. Perhaps the comparisons are closer, or more polarized, within the findings of the other variables.
This pie chart displays the percentage of the 96 students asked about which campuses they attended.

- Sylvania: 46%
- Cascade: 22%
- Online only: 2%
- Rock Creek: 7%
- Southeast: 5%
- Multiple: 18%
Campus

The Sylvania campus is represented well in the survey, but other campuses are underrepresented by differing amounts. In the PCC demographics you can see that the numbers add up to more than 100%, indicating that students attend multiple campuses. The results will be biased toward the population at Sylvania. One way to get a more representative sample is to take a stratified sample where we select a number of students from each campus proportional to the size of the campus.

<table>
<thead>
<tr>
<th>Campus</th>
<th>Student Fact Sheet</th>
<th>Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sylvania</td>
<td>47%</td>
<td>46%</td>
</tr>
<tr>
<td>Multiple Campus</td>
<td>35%</td>
<td>18%</td>
</tr>
<tr>
<td>Rock Creek</td>
<td>38%</td>
<td>7%</td>
</tr>
<tr>
<td>Southeast</td>
<td>19%</td>
<td>5%</td>
</tr>
<tr>
<td>Cascade</td>
<td>30%</td>
<td>22%</td>
</tr>
</tbody>
</table>
The pie chart above states the percentage of races of the 98 volunteers surveyed for the housing insecurity survey. The chart displays most students who took the survey identified as White (54%). The second majority race is two or more races (17%) then as followed: Black or African American alone (11%), Asian alone (10%), Prefer not to Answer (6%), and lastly Native Hawaiian or Pacific Islander (1%) and American Indian or Alaska Native (1%).
The table above represents the variables regarding the Portland Community College Housing survey. This survey has 30 different variables, 23 of them fall into the Categorical type (Check all that apply/single responses) and the last 7 fall into the Quantitative type (discrete), there weren’t any that fell into a Quantitative continuous type.
Comparison of the Sample to the PCC Student Fact Sheet.
Is the sample representative?

<table>
<thead>
<tr>
<th>PCC Demographics</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>62.9%</td>
</tr>
<tr>
<td>Asian</td>
<td>8%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>0.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12.4%</td>
</tr>
<tr>
<td>Black</td>
<td>5.1%</td>
</tr>
<tr>
<td>American Native</td>
<td>0.9%</td>
</tr>
<tr>
<td>Multiracial</td>
<td>6.9%</td>
</tr>
<tr>
<td>Foreign National</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

Overall we feel this sample is representative in terms of race and ethnicity. The sample underrepresents white students, staff and faculty and may overrepresent black and multiracial students, staff and faculty.
Gender from PCC Housing Survey

This data was collected this past winter term by PCC Sociology and Computer Information Systems students. They created this survey to learn more about housing insecurity issues in our PCC community. The survey was administered online and the participation was voluntary. As displayed above in the pie chart, 51 of the survey participants identified as female, 41 participants identified as male, 3 participants identified as non-binary, and 2 participants had the preference not to answer.

The PCC Credit Student Factsheet reported that there were 2,693 females and 2,141 males at the SE campus of PCC in this past winter term. Both collections of data show that females were the majority which means that our sample is an accurate representation of the demographics of PCC.

<table>
<thead>
<tr>
<th></th>
<th>PCC - SE Campus</th>
<th>PCC Housing Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>55.7%</td>
<td>52.6%</td>
</tr>
<tr>
<td>Male</td>
<td>44.3%</td>
<td>42.3%</td>
</tr>
</tbody>
</table>
Orientation from PCC Housing Survey

This data was collected this past winter term by PCC Sociology and Computer Information Systems students. They created this survey to learn more about housing insecurity issues in our PCC community. The survey was administered online and the participation was voluntary. As displayed above in the bar chart, 11 survey participants identified as bisexual, 6 participants identified as gay/lesbian, 3 participants identified as pansexual, 71 participants identified as straight, and 6 participants chose not to answer.
Sample size: 96 Students
Sample Mean: 26.5 Years
Sample Standard Deviation: 11.23

5 # Summary
MIN: 16 Years
Q1: 19 Years
MEDIAN: 22 Years
Q3: 30 Years
MAX: 62 Years
Age from PCC Housing Survey

By looking at our graph, you can see that the data is skewed to the right, and that more than half of PCC’s students are under 30 years of age, with most students falling into the 20-25 bracket. This could be due to many students using PCC to get 2-year Associate degrees before moving to another college. The age group with the fewest amount of students would be the aged 50-55 bracket, but strangely we see older students increasing past 50 and not following the downward trend.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>PCC - SE Campus</th>
<th>PCC Housing Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>23.0%</td>
<td>30.2%</td>
</tr>
<tr>
<td>20-24</td>
<td>29.3%</td>
<td>32.3%</td>
</tr>
<tr>
<td>25-29</td>
<td>18.7%</td>
<td>11.5%</td>
</tr>
<tr>
<td>30-39</td>
<td>16.8%</td>
<td>12.5%</td>
</tr>
<tr>
<td>40-49</td>
<td>7.3%</td>
<td>7.3%</td>
</tr>
<tr>
<td>50+</td>
<td>5.0%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

The median age from the housing survey is 22 years old and the IQR is 11 years. From the table comparing the sample to the PCC demographics data, we see that our data has the most accurate representation of the 40-49 age group and the 50+ age group. Our data shows a heavier representation of the under 20 age group and the 20-24 age group. The 25-59 age group and the 30-39 age group is underrepresented by our data.
Yes, I have a criminal record, and it has impacted my housing choices.

- All four people receive help, in some form.
- All four people rent.
- They either left current living situation because of financial reasons, homelessness, jail, treatment, or both.
- 35 years+
Yearly Income

The majority of PCC students surveyed make less than $10,000.00 a year.
Of PCC students surveyed, the most common response was 41-60% of monthly income is spent on rent.

% Monthly Income spent on Rent
Mean: 53.3 %
:24.34 %
sd: 24.61
Min: 3 %
Q1: 36 %
Median: 52 %
Q3: 70 %
Max: 99%

*** Data is based on the assumption that households are single income. The distribution of percent income spent on rent at PCC is unimodal and symmetric. The mean is 53.3 percent and the median is 52 percent. The IQR is 34 percent and there are no outliers, however, one student spent 99% of their monthly income on rent.
Number of Moves for Students in the last 5 years

Number of Occurrences

Number of Moves (in a 5 year period among PCC students)

Number of Occurrences (among PCC Students)
Number of Moves in 5 years (Students Only)

Sample size: 96 (# that moved, or did not move)

The data does not include 2 people due to no answer
It also does not show 1 person, who moved 80 times due to temporary housing*

Sample mean: 2 moves
Sample Standard Deviation: 1.7947 moves

5-number summary:
  Min: 0 moves
  Q1: 1 moves
  Q2 (median): 2 moves
  Q3: 3 moves
  Max: 8 moves
REASONS FOR MOVING FROM PCC STUDENTS

- Job: 11
- Eviction: 9
- Financial Reasons: 25
- By Choice: 46
- Other: 20
Reasons for Moving

In the Reasons for Moving From PCC Students graph, there are 111 responses included from the PCC Housing Insecurity Survey. Of the 111, the mode, or the highest-occurring variable, was the response: “moved by choice” at 46 responses. The second highest was “moved due to financial reason” at 25 responses, which could range from being unable to pay for housing, short on payments, and so on. Within the “other” category, the responses varied from divorce, army, school, homelessness, and parents’ jobs. These responses were combined into a single category to provide a better visual compared to the more common responses. These number added up to more than 96 like the other categories because this was one of the categorical variables where you can type in an answer and have multiple answer coming from one person.
PCC Student/Faculty Living Arrangements

PCC Survey Living Arrangements

- Alone: 39%
- With a Spouse: 0%
- With a Partner: 6%
- With children: 13%
- With other family: 18%
- With parents: 11%
- With roommates: 7%
- Other: 6%

Chart showing the distribution of living arrangements among PCC students and faculty.
Housing vs. Race

- **Asian**: Occupied by 6, Rent by 3
- **Black**: Occupied by 1, Rent by 5
- **Multiracial**: Occupied by 4, Rent by 13
- **Not Stated**: Occupied by 5, Rent by 4
- **Other**: Occupied by 2, Rent by 2
- **White**: Occupied by 19, Rent by 30

Legend:
- Blue: Sum of Own
- Orange: Sum of Rent
- Gray: Sum of Not Stated
## Home Ownership vs. Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Own</th>
<th>Rent</th>
<th>Not Stated</th>
<th>Total Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Other</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Asian</td>
<td>6</td>
<td>3</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Not Stated</td>
<td>5</td>
<td>4</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Multiracial</td>
<td>4</td>
<td>12</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>White</td>
<td>19</td>
<td>29</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
<td>58</td>
<td>3</td>
<td>98</td>
</tr>
</tbody>
</table>
The probability of ownership in relation to race was calculated by dividing the number of those owning their homes in each group by the total number of participants identifying in that racial group. This group percentage is then compared to the total percentage of participants owning their homes to determine whether different group results are independent of each other.

- Asian: \( P(\text{Own} | \text{Asian}) = 6/9; \text{ approximately } 67\% \)
- Black: \( P(\text{Own} | \text{Black}) = 1/10 \text{ or } 10\% \)
- Multiracial: \( P(\text{Own} | \text{Multiracial}) = 4/16 \text{ or } 25\% \)
- White: \( P(\text{Own} | \text{White}) = 19/50 \text{ or } 38\% \)

Overall probability of homeownership: \( P(\text{Own}) = 37/98; \text{ approximately } 38\% \)

This data indicates that race and homeownership are not independent of each other. Those identifying as white match the overall percentage of home ownership at 38%. Asian participants were much more likely to own their home and black participants were the least likely, with only 10% owning. About 25% of those identifying as multiracial own their home.

Students may own their own home or live with parents who own. Black students were well represented in the sample so this data does seem to indicate an inequity among black students and families in home ownership.
Home Ownership vs. Hispanic Ethnicity

The results from the survey showed that 47% of the hispanic/latinx respondents own their home or live with parents who own, while 38% of the non-hispanic/non-latinx respondents own. This result could reflect more latinx students owning homes or more latinx students living at home with parents compared to other groups.
Assistance Received by PCC Students

Two Groups of Students

<table>
<thead>
<tr>
<th></th>
<th>No Assistance</th>
<th>Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time Students</td>
<td>34</td>
<td>21</td>
</tr>
<tr>
<td>Part-Time Students</td>
<td>14</td>
<td>18</td>
</tr>
</tbody>
</table>
The variables for housing ownership vs gender do not seem to be independent of each other. Based on calculations done from the contingency table, the values did not pass the independent events test \([P(B|A)=P(B)]\). For example, the probability that a volunteer was female given that she owns a home is independent of whether or not that volunteer is a female.

\[
P(F|O)=P(F)
\]

\[
P(.2347/.3776)=P(.2347)
\]

\[
P(.6216)=P(.2347)
\]

Similarly, the probability that a volunteer was male given that he rents his home is independent of whether or not that volunteer is a male.

\[
P(.2755/.5918)=P(.2755)
\]

\[
P(.4655)=P(.2755)
\]

Each independent event test given for these variables have the same result. They are NOT independent. This would mean, based on the sample, the probability that a PCC student owns or rents could be contingent upon their gender.

The dependency is evident when looking at the cluster graph. Rental rates were found to be higher for both females and males. However, while the graph shows there were the same amount of both female and male renters the percentages were not the same within each gender. This is because there were more females than males who took the survey overall. Approximately 55% of females were renters, while 45% live in an owner occupied home. In comparison, approximately 66% of males lived in rentals, while 32% declared ownership. Within the non binary cohort, there were an equal number of renters and owners.
Reasons for Moving and Race

From the data we can see that overall, 32/61 or 52% of renters sampled had moved for financial reasons or eviction, while 48% had not.

For white students, the percentage who had moved for financial reasons or eviction was a bit higher at 55%, The percentage for black students was a bit lower at 44% but multiracial was 58%. None of the three Asian students had moved for financial reasons or evictions and both of the American Indian/Alaskan Native and Hawaiian/Pacific Islander students had.

<table>
<thead>
<tr>
<th></th>
<th>American Indian or Alaskan Native</th>
<th>Asian</th>
<th>Black or African American</th>
<th>Native Hawaiian or Pacific Islander</th>
<th>Two or more races</th>
<th>White</th>
<th>Prefer not to answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moved for Financial Reasons or Eviction</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>17</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>Did not Move for Financial Reasons or Eviction</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>14</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>12</td>
<td>31</td>
<td>4</td>
<td>61</td>
</tr>
</tbody>
</table>
Overall, $\frac{31}{60}$, or 52% of renters sampled had moved for financial reasons or eviction.

For hispanic/latinx students, the percentage was lower at $\frac{2}{7}$ or 29%.

For non-hispanic/latinx students the percentage was $\frac{28}{52}$ or about 54%.
Housing Ownership VS Orientation
From PCC Housing Survey

Orientation

Bisexual  Gay/lesbian  Pansexual  Prefer not to answer  Straight

Own  Rent

# of Survey Participants
## Housing Ownership VS Orientation from PCC Housing Survey

<table>
<thead>
<tr>
<th></th>
<th>Bisexual</th>
<th>Gay/Lesbian</th>
<th>Pansexual</th>
<th>Prefer not to answer</th>
<th>Straight</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Own</strong></td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>24</td>
<td>37</td>
</tr>
<tr>
<td><strong>Rent</strong></td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>44</td>
<td>58</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>11</td>
<td>6</td>
<td>3</td>
<td>6</td>
<td>68</td>
<td>95</td>
</tr>
</tbody>
</table>
Of all the students who are renting, 52% reported moving for financial reasons or eviction.

In this sample the percentage was 92% for students who identified as LGBQ and 42% for students who identified as straight. In future surveys we would like to collect data for trans students as well.

<table>
<thead>
<tr>
<th></th>
<th>Straight</th>
<th>LGBQ</th>
<th>Prefer not to answer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did move for financial reason or eviction</td>
<td>20</td>
<td>11</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>Did not move for financial reasons or eviction</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>12</td>
<td>2</td>
<td>61</td>
</tr>
</tbody>
</table>